Multiple-choice section – choose the correct answer

Question 1 [1.1]

- 1 – (-12) =

A -13 B 13 C -11 D 11

Question 2 [1.3]



A -3 B 3 C -40 D 400

Question 3 [1.4]

-5 + (3  -2) + 6 =

A 7 B -17 C 17 D -5

Question 4 [1.4]



A -15 B 15 C -3 D 21

Question 5 [1.5]

32 + (-4)2 =

A 2 B -2 C 25 D -25

Question 6 [1.5]

26 ÷ 22 =

A 16 B 68 C 3 D 6

Question 7 [1.6]

10 + 50 =

A 1 B 2 C 5 D 6

Question 8 [1.6]

(3 × 4)2 =

A 49 B 25 C 144 D 100

Question 9 [1.4]

A farmer has four children. Each child has four cats. Each cat has four kittens and each kitten kills four mice. The incorrect number of mice killed is:

A 44 B 256 C 42 × 42 D 4 + 4 + 4 + 4

Question 10 [1.3]

Which is the missing number in this number pattern: 27, -9, \_\_\_\_\_, -1?

A 2 B 3 C -4 D -2

Multiple-choice results: \_\_\_ / 10

Short answer section

Question 11 2 marks [1.1]

Write a negative or positive integer to describe the following situations.

(a) Diving to a depth of 9 m under the water. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) Making a profit of $400. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 12 2 marks [1.1]

Arrange the following numbers in order from largest to smallest.

-5, 12, -4, 0, 3

Question 13 5 marks [1.4]

Evaluate the following.

(a) -2 + (-3) – (-5)

(b) -2 × 10

(c) (-1)2 + (3)2

(d) (-1)2 – (2)2 + (-3)2

(e) 54 ÷ -6

Question 14 4 marks [1.1]

The minimum temperatures recorded at Mt Hotham one week were:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Day | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
| Temperature | -3° | -11° | 1° | 2° | 0° | -5° | -1° |

(a) Which day had the lowest minimum temperature? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) Which day recorded the highest minimum temperature? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(c) Between which two days did the biggest change in temperature occur and what was it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 15 2 marks [1.2]

A sports store is selling squash racquets at below ‘cost price’ (the price that the store bought them for). The racquets were bought for $98 and sold for $60 in the sale.

Find the loss made when 15 racquets are sold in the sale.

Question 16 2 marks [1.2]

A six-sided die has the letters A, B, C, D, E and F on its faces. A is worth 1 point, B is worth -2 points, C is worth 3 points, D is worth -4 points, E is worth 7 points and F is worth -3 points. Find the total score for the following rolls: B, B, B, E, F, B.

Question 17 2 marks [1.3]

A group of 4 people loses $2140 buying tickets in a lottery. Write each person’s share of the loss as an integer.

Question 18 2 marks [1.3]

A company made a loss for the year of $2 220 000. Write the amount that the company lost each month as a directed number.

Question 19 2 marks [1.3]

The temperature inside a freezer fell from 12 °C at 6 pm to -12 °C at 2 am. Find the average change in temperature per hour by dividing the overall temperature change by the number of hours.

Question 20 4 marks [1.4]

Evaluate the following.

(a) 15 – 19 × -2 + (-2)2 (b) -2 × -11 – (-24 ÷ -3) + (-4)

Question 21 3 marks [1.4]

A company made a loss of $6 million per month for 4 months and then made a profit of $2 million per month for 8 months. What was the company’s final result for the end of the year?

Question 22 4 marks [1.5]

Evaluate the following.

(a) (-3)2  (3)3 (b) (23  74) ÷ (22  73)

Question 23 5 marks [1.6]

Evaluate the following.

(a)  (b)  (c) (32)3

Question 24 2 marks [1.6]

The prime factors for the number 12 are 22 × 3 because 12 = 2 × 2 × 3. Write the prime factors for 180 in index form.

Short answer results: \_\_\_ / 41

Extended answer section

Question 25 5 marks [1.1]

William travelled 9 floors up, 4 floors down, 3 floors up and 7 floors down in an elevator.

(a) What directed numbers could be used to show this journey?

(b) What single journey could he have taken to get to the final floor?

(c) Write a directed number to show this single journey.

(d) Jacinta was in an adjacent elevator travelling in the opposite direction, for each of the same movements as William. Describe the journey of her elevator.

(e) On which floor did Jacinta finish her journey?

Question 26 4 marks [1.1]

Two submarines are travelling at sea. The first submarine starts at sea level, dives to 30 m below the surface, then moves 12 m towards the surface and finally dives another 17 m.

(a) Write the journey of this submarine in terms of directed numbers.

(b) What is the final position of the first submarine?

(c) The second submarine starts 18 m below the surface, then dives a further 7 m and finally moves 12 m back towards the surface.  
What is the final position of the second submarine?

(d) Describe the position of the second submarine, relative to the first.

Extended answer results: \_\_\_ / 9

TOTAL test results: \_\_\_ / 60